FACT SHEET FOR NPDES PERMIT WA0039527
SAINT-GOBAIN CRYSTALS AND DETECTORS

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Saint-Gobain Crystals and Detectors
Facility Name and Address	Saint-Gobain Crystals and Detectors. 750 South 32nd Street, Washougal WA 98671-2520
Type of Facility:	Crystalline Materials Manufacturer
SIC Code	2819
Discharge Location	Outfall 001: City of Washougal Sanitary Sewer Connection Outfall 002: Gibbons Creek remnant channel, a tributary of the Columbia River Latitude: 122° 19' 53" N Longitude: 45° 34' 19" W.
Water Body ID Number	NN57SG (old WR-CR-101)

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The Saint-Gobain Crystals and Detectors facility has been in operation since 1978. The facility was originally owned by the Union Carbide Corporation, which operated the facility first as a test plant and later as a production plant, with major expansions in the 1980s. In 1988, Ecology issued a permit for discharges to the sanitary sewer. In 1999, Saint-Gobain Industrial Ceramics purchased the facility and has operated it continuously since the purchase.

INDUSTRIAL PROCESS

Saint-Gobain Crystals and Detectors grows and manufactures crystalline materials for commercial and industrial applications. Manufacturing consists of crystal growth and physical and chemical processing (e.g. cutting, buffing, acid cleaning). Enviroclean, a subsidiary company, also operates on site. Enviroclean cleans and refurbishes semi-conductor manufacturing equipment.

DISCHARGE OUTFALL

The facility has two outfalls, 001 and 002. The facility discharges an average of 45,000 gallons per day through Outfall 001 to the City of Washougal sanitary sewer that drains to the city's wastewater treatment plant. Ecology regulates the City's Wastewater Treatment Plant discharge to the Columbia River under a separate permit, No. WA007427. Sources of wastewater to Outfall 001 include wastewaters from cleaning processes, discharges from acid scrubbers used to treat air discharges, a pre-treated fluoride waste stream, and discharges of acidic and basic cleaning solutions from the Enviroclean operation. Saint-Gobain pre-treats the hydrofluoric acid waste stream using pH adjustment and filtration, and adjusts the final pH of the combined wastewater flow through addition of hydrochloric acid and sodium hydroxide solutions.

The facility discharges an average of 29,000 gallons per day through Outfall 002, not including stormwater. Outfall 002 collects concentrate from reverse osmosis water treatment filters and cooling tower blow down and drains to a City of Washougal storm drain on 32nd Street, and thence to the Gibbons Creek remnant channel approximately ½ mile north of the facility. The remnant channel is a tributary to the Columbia River via a pump station located ½ mile west of 32nd Street. The pump station limits the hydrologic connection between the two water bodies. Water in the Gibbons Creek Remnant Channel must either be pumped over the dike when flood control measures must be taken to protect the Industrial Park, or water will flow over a weir when the Remnant Channel is at higher level than the river. There is no hydrologic contact between the Remnant Channel and the Columbia River under normal, non-flood conditions and salmon no longer enter the remnant channel, although other aquatic organisms are resident there.

Ecology regulates stormwater discharges from Saint-Gobain under a separate General Permit.

PERMIT STATUS

The previous permit for this facility was issued on August 30, 1988. The permit placed effluent limitations on flow, arsenic, fluoride, pH and total toxic organics for discharges to Outfall 001; and limitations on pH for discharges to Outfall 002. An application for permit renewal was submitted to the Department on January 30, 2002 and accepted by the Department on March 1, 2002.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

During the history of the previous permit, the Permittee has remained in compliance with its permit conditions based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. Ecology inspected the facility most recently on December 5, 2002.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters:

Table 1: Wastewater Characterization Data (January 1998 to September, 2002)

Parameter	Outfall 001		Outfall 002	
	Range	Average	Range	Average
Flow gal/day	60 – 64,900	33,800	0 – 93,900	30,200
Arsenic mg/L	ND	ND		
BOD_5 mg/L	0 – 110	26		
COD mg/L	0 – 154	38		
Fluoride mg/L	0 – 15	5		
pH s.u.	6.2 – 8.9		6.4 – 8.9	
TSS mg/L	0 – 52	11		

SEPA COMPLIANCE

The issuance, reissuance, or modification of a waste discharge permit that contains conditions no less stringent than federal effluent limitations and state rules is not subject to the requirements of RCW 43.21C.030(2)(c). This exemption applies to existing discharges (RCW 43.21C.0383). This permit is for an existing discharge and is therefore not subject to the requirements of RCW 43.21C.030(2)(c).

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the

application as present in the effluent**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation**.** Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Ecology is establishing technology-based effluent limits based upon past treatment system performance at the facility. The limits are the same limits contained in the existing permit and are retained in this permit as the discharger has demonstrated its ability to meet them. The previous permit contained limits on arsenic that would have gone in to effect if the facility introduced arsenic in its manufacturing operations. The facility never used arsenic and the limits never went into effect. Facility representatives stated to Ecology staff at the most recent inspection that they have no plans to introduce arsenic into the manufacturing process. As a result, Ecology has not included limits for arsenic in this permit.

Parameter	Discharge Point	Limit (Maximum Daily)
Fluoride mg/L	Outfall 001[1]	15
pH s.u.	Outfall 001	6 – 9[2]
pH s.u.	Outfall 002	6 – 9[2]

1. To be measured at the point of treatment of the hydrofluoric acid waste stream.
2. The pH of the discharger is to be within the range of 6 to 9.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants

allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria. Because of the nature of the receiving water and lack of dilution studies therein, Ecology is not now authorizing a mixing zone for this discharge.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges process wastewater (reverse osmosis filter concentrate and cooling tower blowdown) through outfall 002 to the Gibbons Creek remnant channel via the City storm drain. The

remnant channel is a tributary to the Columbia River, designated as a Class **A** receiving water as a tributary to the Class A Columbia River. Other nearby point source outfalls include Allweather Wood Treaters (stormwater), Exterior Wood (stormwater), and Pendleton Woolen Mills (stormwater and cooling water). The other businesses located within the Camas Washougal Industrial Park are collectively, potentially, a significant nearby non-point sources of pollutants.

Characteristic uses of the Gibbons Creek remnant channel and Columbia River include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA (OUTFALL 002)

Surface water quality criteria applicable to discharges from Outfall 002 are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Temperature	18 degrees Celsius maximum When natural conditions exceed 18°C, incremental increases shall not exceed 0.3°C. At all times, incremental increases at a mixing zone boundary shall not exceed 28/(T+7)°C, where T is represents the background temperature.
pH	6.5 to 8.5 standard units No human-caused variation greater than 0.5 s.u.
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

In considering the need to modify limits from the previous permit, Ecology's considered results from its water quality study on the Gibbons Creek Remnant Channel, published in 1996, based on data collected in late 1994 and early 1995. In September of 1994, Ecology staff noted an increase in temperature of 4˚C, from 16˚C to 20˚C, between 32nd Street and the mouth of the channel, where temperature standards were violated. The cause of the increase in temperature and the standards exceedance is unclear. At the time, other facilities besides Union Carbide (the facility owner in 1994) discharged cooling water to the channel.

Saint-Gobain reports in its application that the discharge temperature at Outfall 002 is 22°C, based upon a single sample. A follow-up sample showed the discharge to be 16°C. The variability in the discharge temperature is likely due to the intermittent nature of the flows that contribute to the discharge. The temperatures of these flows range individually from 10-22°C, according to the second sampling.

The lack of potential mixing in the Gibbons Creek remnant channel combined with potential discharges above the water quality standard create a reasonable potential to violate the temperature standard. As a result, Ecology is setting an effluent limit for temperature equal to the standard (18°C), consistent with recent changes to another permit in this basin. The permitee will have three years to achieve compliance with the new permit limit. An interim temperature limit of 25°C applies during the 3-year compliance

period. The permit allows the permittee to submit a request for an alternative compliance point at the City Storm drain outfall downstream of Outfall 002. The request must be accompanied by a data report that shows that water discharged from the storm drain meets the temperature standard (18°C).

Ecology staff also noted an exceedance of the pH standard below the 32nd storm drain at station RC-2 in September 1994, due apparently to a high pH (9.8) stormwater discharge from the 32nd street drain. That month, Union Carbide reported a pH of 8.5. Since the permit was issued in 1988, the facility's discharge to the storm drain has had a pH of less than 8.9. Ecology has retained the effluent limits from the previous permit.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as evidenced by the discharger's acute toxicity data gathered over the past five years. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health, The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has been unable to determine at this time the potential for this discharge to cause a violation of sediment quality standards. If the Department determines in the future that there is a potential for violation of the Sediment Quality Standards, an order will be issued to require the Permittee to demonstrate that either the point of discharge is not an area of deposition or, if the point of discharge is a depositional area, that there is not an accumulation of toxics in the sediments.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED AUGUST 30, 1988

Permit limits are not changed from the existing permit issued on August 30, 1988, except that the average monthly and maximum limit for arsenic have been eliminated and a limit for temperature has been added.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

The permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

OPERATION AND MAINTENANCE MANUAL

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment systems (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An operation and maintenance manual will be submitted as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). It has been determined that the implementation of the procedures in the Operation and Maintenance Manual is a reasonable measure to ensure compliance with the terms and limitations in the permit.

PROHIBITED DISCHARGES

The permit contains prohibitions on certain discharges to protect the sewerage collection system, treatment plant, and treatment plant processes, and to prevent pass through.

DILUTION PROHIBITED

The permit contains prohibition dilution of wastewaters as a substitute for treatment.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The proposed permit requires the Permittee to develop and implement a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

COMPLIANCE PROGRESS REPORTS

The permit requires submittal of annual progress reports describing the status of efforts to comply with the final effluent limit for temperature.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication No. 92-109.

1996. Gibbons Creek Remnant Channel Receiving Water Study. Publication No. 96-313.

2001. Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. Publication No. 95-80.

Laws and Regulations (http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on March 6, 2002 in *The Columbian* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on (date) in *The Columbian* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360-407-6280), or by writing to the address listed above.

This permit and fact sheet were written by Gregory S. Zentner, Environmental Engineer III.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--RESPONSE TO COMMENTS

St. Gobain commented on the limited hydrologic connection between the Gibbons Creek Remnant Channel and the Columbia River. In response to this comment, Ecology added clarifying language to the fact sheet but did not change the permit.